

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 1-4 and 7-15 are presented for consideration. Claim 1 is the sole independent claim. Claim 1 has been amended to clarify features of the subject invention, while claim 6 has been canceled without prejudice or disclaimer. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicant requests reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 1-4, 6 and 11-15 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,789,734 to Torigoe et al. in view of the published European patent application number 0 820 132 to Ohmi et al. Claims 7 and 8 were rejected under 35 U.S.C. § 103 based on that art combination and further in view of U.S. Patent No. 6,256,087 to Bader. Claims 9 and 10 were rejected under 35 U.S.C. § 103 as being unpatentable over the original art combination and further in view of U.S. Patent No. 5,552,892 to Nagayama. Applicant submits that the cited art, whether taken individually or in combination, does not teach many features of the present invention, as previously recited in independent claim 1. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that independent claim 1, as presented, amplifies the distinctions between the present invention and the cited art.

Independent claim 1 recites an exposure apparatus that includes an illumination optical system for illuminating a pattern of a reticle with laser light outputted from a continuous

emission laser, a projection optical system for projecting the illuminated pattern onto a subject to be exposed, an interferometer of a Fizeau type, being operable while using laser light outputted from the continuous emission laser, and a stabilization mechanism for stabilizing an emission wavelength of the continuous emission laser, by moving a resonance mirror of the continuous emission laser.

Applicant submits that the cited art, whether taken individually or in combination, does not teach or suggest such features of the present invention, as recited in independent claim 1.

The Examiner takes the position that Fizeau interferometers are well known in the art, and that providing the arrangement in the Torigoe et al. patent with one would have been an obvious expedient. This contention is respectfully traversed.

Although Fizeau interferometers are well known in the art, as is discussed in the subject specification on pages 8 and 9, such interferometers typically must be used with a light source having a long coherence length. However, lasers that are conventionally used in exposure apparatuses as exposure light sources are all pulse emission type lasers, which have a short coherence length. For this reason, Applicant submits that introducing a Fizeau interferometer into a conventional exposure apparatus (as in the Torigoe et al. patent), to be used as a light source (that is, a short-coherence light source) of the exposure apparatus would not have been obvious to one skilled in the art, because such a modification would raise a serious problem.

Applicant has, therefore, formulated the present invention while paying particular note to the fact that a continuous emission laser has a long coherence length. Thus, in the present invention recited in independent claim 1, a continuous emission laser is used in the exposure

apparatus as a the exposure light source, with the Fizeau interferometer being introduced into this exposure apparatus to be used with that particular light source. Applicant submits that such an arrangement enables measurement of aberration of a projection optical system to be used with the exposure light source, with an improved precision and with a very simple mechanism. This significant technical advantage is discussed in more detail on page 6 of the subject disclosure.

For the reasons noted above, Applicant submits that the present invention, as recited in independent claim 1, would not have been obvious in view the cited documents.

Notwithstanding the foregoing, Applicant has also amended claim 1 to recite an additional feature that the exposure apparatus is provided with a stabilization mechanism for stabilizing an emission wavelength of the continuous emission laser, by moving a resonance mirror of the continuous emission laser. Such advantages of this arrangement are discussed in more detail on page 9 of the subject disclosure. Applicant submits that the cited art, whether taken individually or in combination, likewise does not teach or suggest these features of the present invention, as recited in independent claim 1.

For the reasons noted above, Applicant submits that the cited art, namely, the Torigoe et al. patent, the Ohmi et al. publication, the Bader patent and the Nagayama patent, do not teach or suggest the salient features of Applicant's present invention as recited in independent claim 1.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claim 1, is patentably defined over the cited art, whether that art is taken individually or in combination.

Dependent claims 2, 3 and 7-15 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 1. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven E. Warner", is written over a horizontal line.

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